12/5/00 Kerfield.

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AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claim 1 (Currently amended): A data storage medium comprising:

a first layer comprising a substrate;

a second layer including a photopolymer, the second layer exhibiting surface variations, wherein the photopolymer is pre-written with the surface variations and cured; and

a third layer including a magnetic recording material and substantially conforming to the surface variations of the second layer, wherein the third layer including the magnetic recording material forms a substantially continuous layer over the surface variations.

Claim 2. (Canceled)

Claim 3 (Previously Presented): The data storage medium as described in claim 1, wherein the first layer is a disk-shaped substrate.

Claim 4 (Previously Presented): The data storage medium as described in claim 1, wherein the first layer provides rigidity and mechanical stability to the medium.

Claim 5 (Previously Presented): The data storage medium as described in claim 1, wherein the first layer comprises one of the following: glass, aluminum, aluminum-magnesium alloy, ceramic and plastic.

Claim 6 (Currently amended): The data storage medium as described in claim 1, wherein the photopolymer includes a photopolymerized material.

Claim 7 (Currently amended): The data storage media as described in claim 6, wherein the photopolymer comprises at least 30% by weight of radiation polymerized components selected from epoxy-terminated silanes.

Claim 8 (Original): The data storage medium as described in claim 1, wherein the surface variations are machine-readable data patterns.

Claim 9 (Original): The data storage medium as described in claim 8, wherein the data patterns include data bumps.

Claim 10 (Original): The data storage medium as described in claim 9, wherein at least some of the data bumps comprise encoded data.

Claim 11 (Original): The data storage medium as described in claim 1, wherein the surface variations are protrusions.

Claim 12 (Original): The data storage medium as described in claim 11, wherein the surface variations include at least one of the following: bumps, rails, lands and ridges

Claim 13 (Original): The data storage medium as described in claim 1, wherein the surface variations are depressions.

Claim 14 (Original): The data storage medium as described in claim 13, wherein the surface variations include at least one of the following: pits, grooves, and channels.

Claim 15 (Original): The data storage medium as described in claim 1, wherein the surface variations contain servo patterns.

Claim 16 (Original): The data storage medium as described in claim 1, wherein the surface variations contain tracking patterns.

Claim 17 (Previously Presented): The data storage medium as described in claim 1, wherein the surface variations project from the medium a height less than 50 nanometers.

Claims 18-19 (Canceled)

Claim 20 (Previously Presented): The data storage medium as described in claim 1, wherein the third layer comprises a thin film stack including an underlay, the magnetic recording material, and a hard coat.

Claim 21 (Currently amended): The data storage medium as described in claim 20~~21~~, wherein the underlay includes a chrome alloy and the magnetic recording material includes a cobalt alloy.

Claim 22 (Original): The data storage medium as described in claim 21, wherein the hard coat includes at least one of the following: carbon, nitrogenated-carbon, and hydrogenated-carbon.

Claim 23 (Previously Presented): The data storage medium as described in claim 1, wherein the third layer further includes a buffer.

Claim 24 (Previously Presented): The data storage medium as described in claim 1, further comprising a fourth layer substantially conforming to the surface variations.

Claim 25 (Original): The data storage medium as in claim 24, wherein the fourth layer includes a lubricating material.

Claim 26 (Previously Presented): The data storage medium as in claim 25, wherein a medium surface is flyable.

Claim 27 (Currently amended): A data storage medium comprising:

a substantially rigid substrate;

a photopolymer containing surface variations, wherein the photopolymer is pre-written with the surface variations and cured;

a thin film stack substantially conforming to the surface variations, comprising a plurality of sub-layers, ~~and~~ including an underlayer, a magnetic recording material and a hard coat; and

a lubrication layer substantially conforming to the surface variations,

wherein the surface variations are arranged in a machine-readable pattern.

Claim 28 (Currently amended): A data storage medium comprising:

a flexible contact media substrate;

a photopolymer containing surface variations, wherein the photopolymer is pre-written with the surface variations and cured;

a thin film stack substantially conforming to the surface variations and comprising a plurality of sub-layers, ~~and~~ including an underlayer, a magnetic recording material and a hard coat; and

a lubrication layer substantially conforming to the surface variations,

wherein the surface variations are arranged in a machine-readable pattern.

Claim 29 (Currently amended): A data storage medium comprising:

a substantially transparent plastic substrate including optically detectable features;

a reflective layer to facilitate optical detection of the optically detectable features via reflection of an optical signal;

a photopolymer containing surface variations, wherein the photopolymer is pre-written with the surface variations and cured;

a thin film stack comprising a plurality of sub-layers, including an underlayer, a magnetic recording material and a hard coat, and substantially conforming to the surface variations; and

a lubrication layer substantially conforming to the surface variations,

wherein the surface variations are arranged in a machine-readable pattern.

Claim 30 (Currently amended): A data storage medium comprising:

a first data storage layer;

a second data storage layer, the second data storage layer including a photopolymer containing surface variations, wherein the photopolymer is pre-written with the surface variations and cured;

a thin film stack comprising a plurality of sub-layers, including an underlayer, a magnetic recording material and a hard coat, and substantially conforming to the surface variations; and

a lubrication layer substantially conforming to the surface variations,

wherein the surface variations are arranged in a machine-readable pattern.

Claim 31 (Currently amended): A removable hard disk unit comprising:

a housing; and

a data storage unit within the housing comprising:

a first layer comprising a substrate;

a second layer including a photopolymer, the second layer exhibiting surface variations, wherein the photopolymer is pre-written with the surface variations and cured; and

a third layer including a magnetic recording material and substantially conforming to the surface variations of the second layer, wherein the third layer including the magnetic recording material forms a continuous layer over the surface variations.

Claim 32 (Currently amended): A system comprising:

a housing;

a flying head transducer within the housing; and

a data storage unit within the housing comprising:

a first a layer comprising substrate;

a second layer including a photopolymer, the second layer exhibiting surface variations, wherein the photopolymer is pre-written with the surface variations and cured; and

a third layer including a magnetic recording material and substantially conforming to the surface variations of the second layer, wherein the third layer including the magnetic recording material forms a continuous layer over the surface variations.

Claim 33 (Withdrawn): A method comprising:

providing a substrate;

applying a polymer film on the substrate;

creating one or more surface variations on the film;

applying an additional layer over the film such that the additional layer substantially conforms to the surface variations.

Claim 34 (Withdrawn): The method of claim 33, further comprising applying a plurality of additional layers over the film such that the plurality of additional layers substantially conform to the surface variations.

Claim 35 (Withdrawn): The method of claim 33, wherein applying a film on the substrate comprises spin coating the substrate.

Claim 36 (Withdrawn): The method of claim 33, wherein applying a film on the substrate comprises roll coating the substrate.

Claim 37 (Withdrawn): The method of claim 33, wherein creating one or more surface variations comprises stamping the film with a stamper.

Claim 38 (Withdrawn): The method of claim 33, wherein applying a film on the substrate and creating the one or more surface variations comprises an injection molding process.

Claim 39 (Withdrawn): The method of claim 33, wherein applying a film on the substrate and creating the one or more surface variations comprises a rolling bead process.

Claim 40 (Withdrawn): The method of claim 33, wherein the polymer film comprises less than 1% solvent.

Claim 41 (Withdrawn): The method of claim 33, wherein the polymer film comprises at least 30% ambifunctional silanes.

Claim 42 (Withdrawn): The method of claim 33, wherein the polymer film comprises at least 15% heterocyclic acryloyloxy materials.

Claim 43 (Withdrawn): The method of claim 33 wherein the polymer film comprises 30% to 70% hydantoin hexacrylate.